

AMENDED CLAIMS

[received by the International Bureau on 25 February 2004 (25.02.04);
original claims 1-26 replaced by amended claims 1-26 (5 pages)]

1. An electrical connector (40) for interconnecting a pair of flat circuits, comprising:
a housing (42) having a front mating face (42a), a rear terminating face (42b), a top face (42c) and a bottom face (42d) for mounting on a first flat circuit, the housing including a cavity (46) for receiving a second flat circuit with the cavity having an insertion opening (48) in the front mating face of the housing, and the housing having at least one through passage (62) extending from the top face through the bottom face thereof;

a plurality of terminals (44) mounted in the housing along said cavity (46), the terminals having contact portions (44c) for engaging appropriate circuit contacts on the second flat circuit when the second flat circuit is inserted through said opening into the cavity; and

a reinforcing member (60) having a body portion (60a) inserted into said through passage (62) in the housing from the top face thereof and including a foot portion (60c) exposed at the bottom face of the housing for securing to the first flat circuit, and the reinforcing member having a locking portion (60b) extending oblique to the body portion (60a) and engageable with a locking surface (70) on the housing.

2. The electrical connector of claim 1 including a pair of said through passages (62) and a corresponding pair of said reinforcing members (60) at opposite sides of the housing.

3. The electrical connector of claim 2 wherein said pair of through passages (62) are located in the housing outside opposite ends of said cavity (46).

4. The electrical connector of claim 1 wherein said housing (42) is fabricated of dielectric plastic material and said reinforcing member (60) is fabricated of metal material.

5. The electrical connector of claim 4 wherein said reinforcing member (60) includes a plurality of claws (72) for skiving into the plastic material of the housing within the through passage (62).

6. The electrical connector of claim 1 wherein said reinforcing member (60) is generally L-shaped, with the body portion (60a) and the locking portion (60b) of the reinforcing member forming respective oblique legs of the L-shape.

7. The electrical connector of claim 6 wherein the body portion (60a) and the locking portion (60b) of said reinforcing member (60) are generally planar.

8. The electrical connector of claim 7 wherein the top face (42c) of the housing includes a recess (62b) for receiving the locking portion (60b) of said reinforcing member (60) generally flush with the top face.

9. The electrical connector of claim 1 wherein said through passage (62) is generally L-shaped to define a first leg (62a) extending from the top face (42c) through the bottom face (42d) of the housing and a second, oblique leg (62b) forming a recess in the top face of the housing for receiving the locking portion (60b) of the reinforcing member generally flush with the top face.

10. The electrical connector of claim 1 wherein said body portion (60a) of the reinforcing member (60A) is generally planar, and said locking portion is in the form of a locking arm (80) coplanar with and projecting outwardly of the body portion.

11. The electrical connector of claim 10, including a pair of said locking arms (80) projecting outwardly from opposite sides of the body portion.

12. The electrical connector of claim 1 wherein said body portion (60a) of the reinforcing member (60) is generally planar, and said foot portion (60c) is bent into a U-shaped configuration to define a tangent line of securement (60d) with the first flat circuit.

13. The electrical connector of claim 12 wherein said reinforcing member (60) is stamped and formed of sheet metal material.

14. The electrical connector of claim 12 wherein said U-shaped foot portion (60c) is soldered to an appropriate securing pad on the first flat circuit along said tangent line of securement (60d).

15. An electrical connector (40) for interconnecting a pair of flat circuits, comprising: a housing (42) fabricated of dielectric plastic material and having a front mating face

(42a), a rear terminating face (42b), a top face (42c) and a bottom face (42d) for mounting on a first flat circuit, the housing including a cavity (46) for receiving a second flat circuit with the cavity having an insertion opening (48) in the front mating face of the housing, and the housing having a pair of through passages (62) extending from the top face through the bottom face thereof, each through passage (62) being generally L-shaped to define a first leg (62a) extending from the top face through the bottom face of the housing and a second, oblique leg forming a recess (62b) in the top face of the housing;

a plurality of terminals (44) mounted in the housing along said cavity (46), the terminals having contact portions (44c) for engaging appropriate circuit contacts on the second flat circuit when the second flat circuit is inserted through said opening into the cavity; and

a pair of reinforcing members (60) fabricated of metal material and having a body portions (60a) inserted into said pair of through passages (62) in the housing from the top face thereof, the reinforcing members including feet portions (60c) exposed at the bottom face of the housing for securing to the first flat circuit, each reinforcing member (60) being generally L-shaped corresponding to the L-shape of the through passages (62), with the body portion (60a) forming one leg of the L-shape and a locking portion (60b) extending oblique to the body portion and forming an oblique leg of the L-shape, the locking portion being engageable with a locking surface (70) on the housing.

16. The electrical connector of claim 15 wherein said pair of through passages (62) are located in the housing outside opposite ends of said cavity (46).

17. The electrical connector of claim 15 wherein said reinforcing members (60) include a plurality of claws (72) for skiving into the plastic material of the housing within the through passage.

18. The electrical connector of claim 15 wherein the body portion (60a) and the locking portion (60b) of each reinforcing member are generally planar.

19. The electrical connector of claim 15 wherein the body portion (60a) of each reinforcing member (60A) is generally planar, and including an additional locking portion in the form of a locking arm (80) coplanar with and projecting outwardly of the body portion.

20. The electrical connector of claim 19, including a pair of said locking arms (80) projecting outwardly from opposite sides of the body portion (60a).

21. The electrical connector of claim 15 wherein said body portion (60a) of each reinforcing member (60) is generally planar and the foot portion (60c) thereof is bent into a U-shaped configuration to define a tangent line of securement (60d) with the first flat circuit.

22. The electrical connector of claim 21 wherein said reinforcing members (60) are stamped and formed of sheet metal material.

23. The electrical connector of claim 21 wherein said U-shaped foot portion (60c) is soldered to an appropriate securing pad on the first flat circuit along said tangent line of securement (60d).

24. An electrical connector (40) for interconnecting a pair of flat circuits, comprising: a housing (42) having a front mating face (42c), a rear terminating face (42b), a top face (42c) and a bottom face (42d) for mounting on a first flat circuit, the housing including a cavity (46) for receiving a second flat circuit with the cavity having an insertion opening (48) in the front mating face of the housing, and the housing having at least one through passage (62) extending from the top face through the bottom face thereof;

a plurality of terminals (44) mounted in the housing along said cavity (46), the terminals having contact portions (44c) for engaging appropriate circuit contacts on the second flat circuit when the second flat circuit is inserted through said opening into the cavity; and

a reinforcing member (60) having a generally planar body portion (60a) inserted into said through passage (62) in the housing from the top face thereof and including a foot portion (60c) exposed at the bottom face (42d) of the housing for securing to the first flat circuit, said foot portion being bent into a U-shaped configuration to define a tangent line of securement (60d) with the first flat circuit (60a).

25. The electrical connector of claim 24 wherein said reinforcing member (60) is stamped and formed of sheet metal material.

26. The electrical connector of claim 24 wherein said U-shaped foot portion (60c) is soldered to an appropriate securing pad on the first flat circuit along said tangent line of securement (60d).